

Slug In Well M1, Test 1

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity values from slug test data

Monitor Well MW-1: 7" diameter boring.

	L/rw=	32.646
rc=	0.0833	A= 2.00 ln[(D-H)/rw]=6
rw=	0.291	B= 0.50
L=	9.5	C= 1.75
H=	50	
y0=	0.6	
yt=	0.01	ln(y0/yt)= 4.094
t=	0.1	

Partially penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.153)-1 \\ &= 2.726 \end{aligned}$$

$$\begin{aligned} K &= (rc2\ln(Re/rw)\ln(y0/yt))/2Lt \\ K &= 4.08E-02 \text{ feet/min} \\ &= 438.976 \text{ gpd/ft}^2 \end{aligned}$$

Fully penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw) + C/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.054)-1 \\ &= 3.740 \end{aligned}$$

$$\begin{aligned} K &= 5.59E-02 \text{ feet/min} \\ &= 602.439 \text{ gpd/ft}^2 \end{aligned}$$

Slug Out Well MW-1, Test 1

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity from slug test data

Monitor Well MW-1: 8" diameter boring.

	L/rw=	32.646
rc=	0.0833 A=	2.50 ln[(D-H)/rw]=6
rw=	0.291 B=	0.50
L=	9.5 C=	2.00
H=	50	
y0=	0.2	
yt=	0.001 ln(y0/yt)=	5.298
t=	0.33	

Partially penetrating well

$$\ln(Re/rw) = \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\} - 1$$

$$\ln(Re/rw) = (0.214 + 0.168) - 1$$

$$= 2.616$$

$$K = (rc^2 \ln(Re/rw) \ln(y0/yt)) / (2Lt)$$

$$K = 1.53E-02 \text{ feet/min}$$

$$= 165.241 \text{ gpd/ft}^2$$

Fully penetrating well

$$\ln(Re/rw) = \{1.1/\ln(H/rw) + C/(L/rw)\} - 1$$

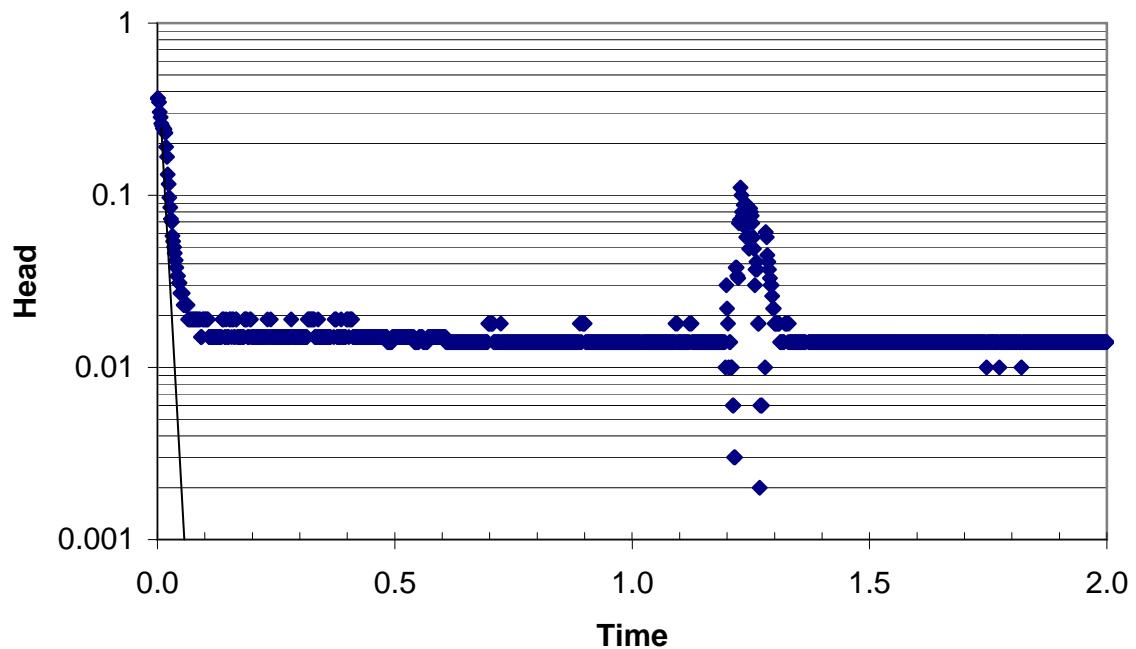
$$\ln(Re/rw) = (0.214 + 0.061) - 1$$

$$= 3.636$$

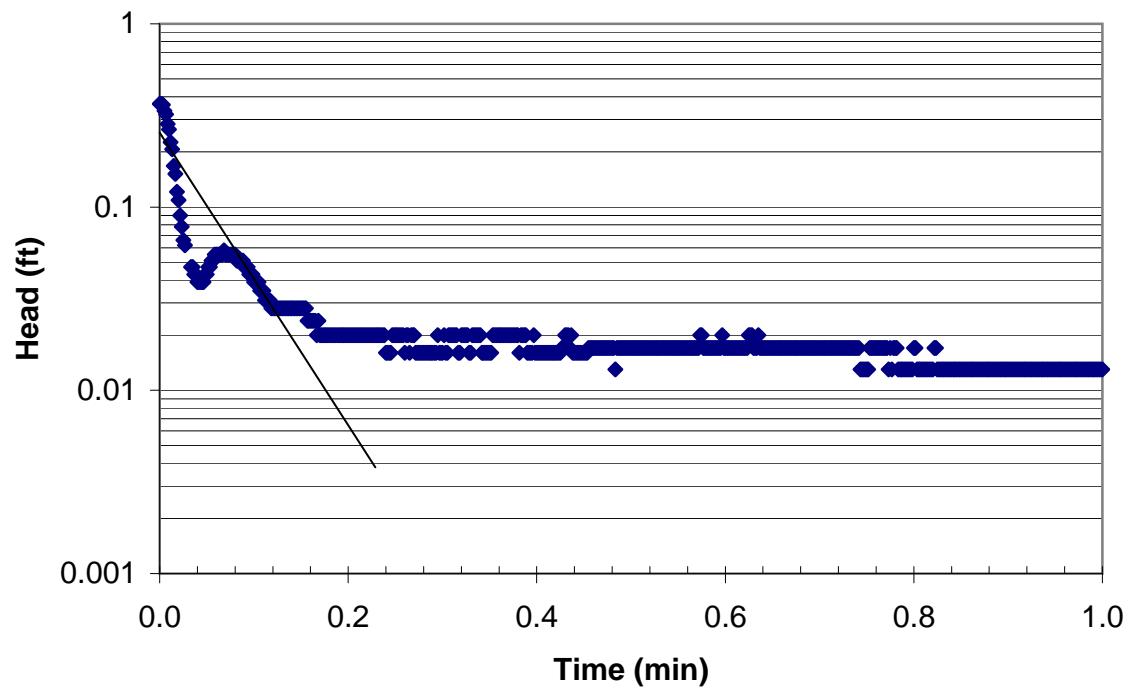
$$K = 2.13E-02 \text{ feet/min}$$

$$= 229.661 \text{ gpd/ft}^2$$

M1 Slug In Test 1



M1 Slug Out Test 1



Slug In Well M1 Test 2

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity values from slug test data

Monitor Well MW-1: 7" diameter boring.

	L/rw=	32.646
rc=	0.0833 A=	2.00 ln[(D-H)/rw]=6
rw=	0.291 B=	0.50
L=	9.5 C=	1.75
H=	50	
y0=	0.6	
yt=	0.01 ln(y0/yt)=	4.094
t=	0.087	

Partially penetrating well

$$\ln(Re/rw) = \{1.1/\ln(H/rw) + [A + B\ln((D-H)/rw)]/(L/rw)\} - 1$$
$$\ln(Re/rw) = (0.214 + 0.153) - 1$$
$$= 2.726$$

$$K = (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt$$
$$K = (4.68E-02 \text{ feet/min})$$
$$= 504.570 \text{ gpd/ft}^2$$

Fully penetrating well

$$\ln(Re/rw) = \{1.1/\ln(H/rw) + C/(L/rw)\} - 1$$
$$\ln(Re/rw) = (0.214 + 0.054) - 1$$
$$= 3.740$$

$$K = (6.43E-02 \text{ feet/min})$$
$$= 692.459 \text{ gpd/ft}^2$$

Slug Out Well M1 Test 2

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity from slug test data

Monitor Well MW-1: 8" diameter boring.

	L/rw=	32.646
rc=	0.0833	A= 2.50 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	9.5	C= 2.00
H=	50	
y0=	0.6	
yt=	0.001	$\ln(y0/yt)= 6.397$
t=	0.6	

Partially penetrating well

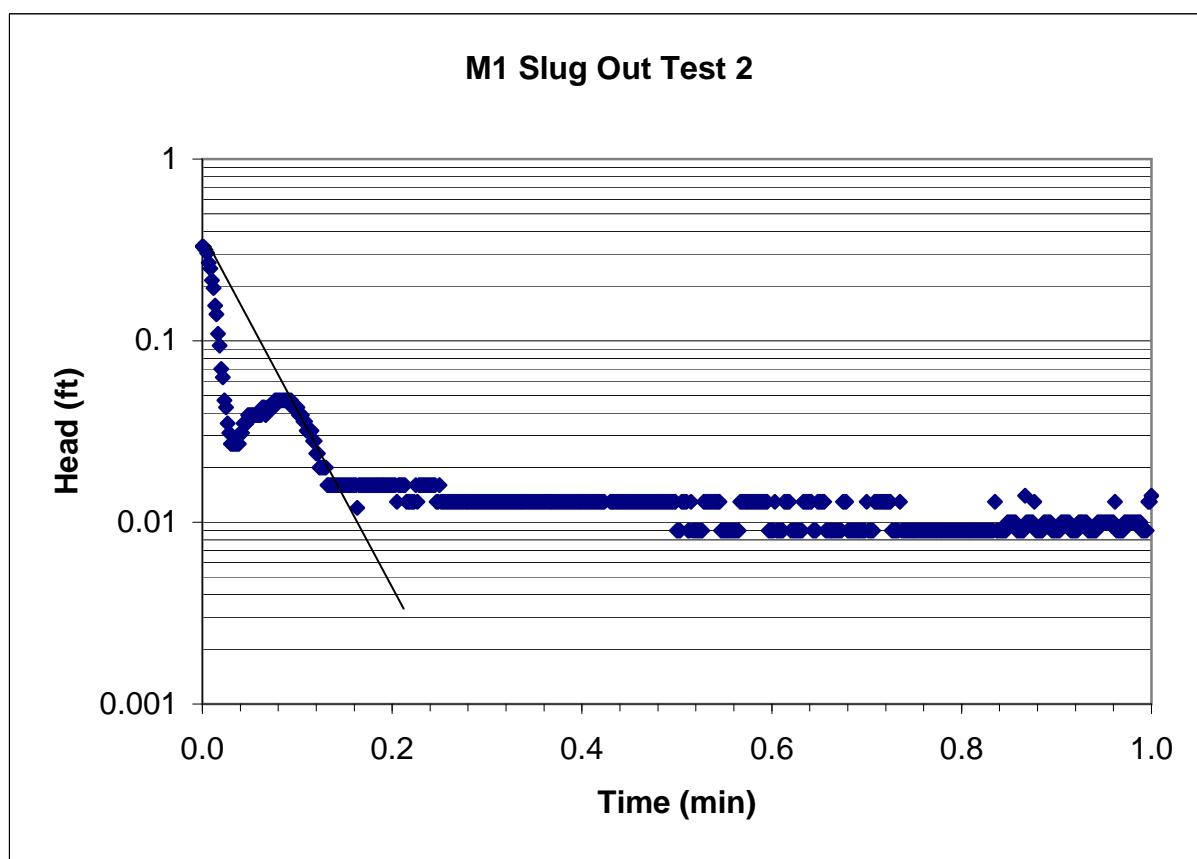
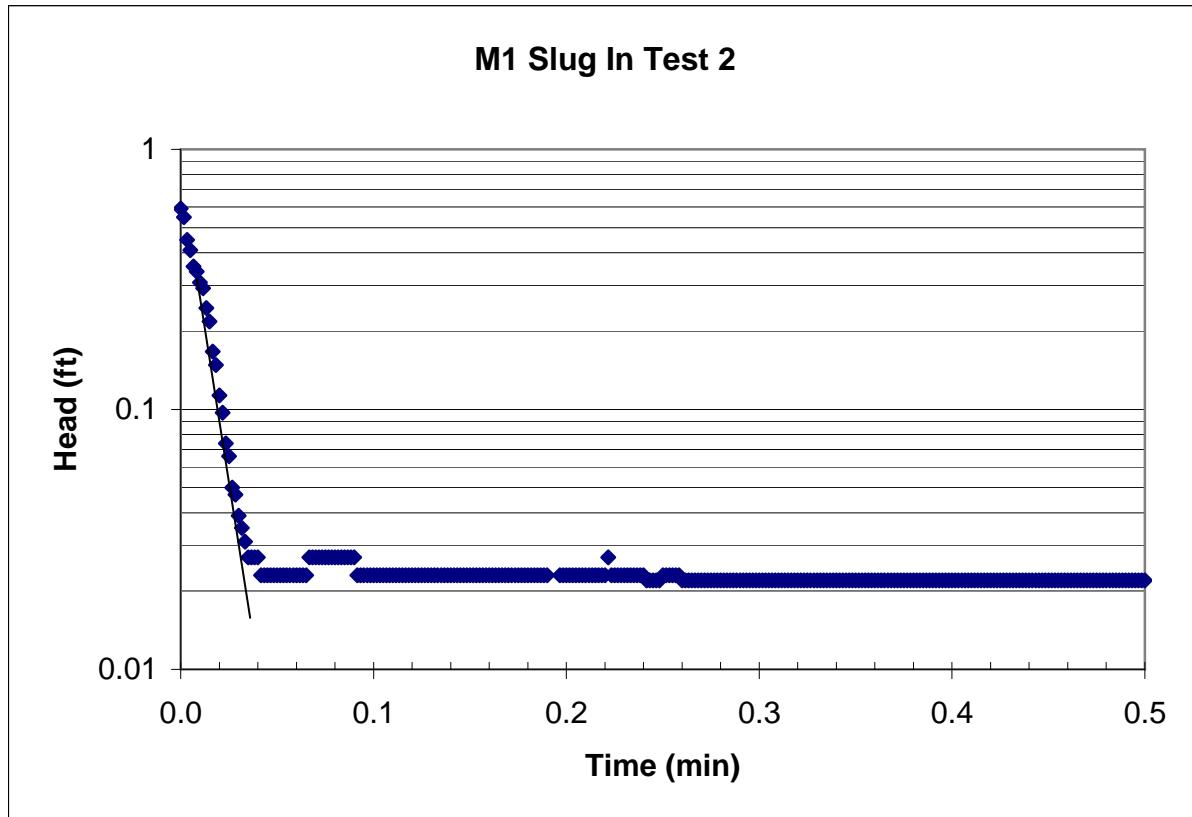
$$\ln(Re/rw) = \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\} - 1$$
$$\ln(Re/rw) = (0.214 + 0.168) - 1$$
$$= 2.616$$

$$K = (rc^2 \ln(Re/rw) \ln(y0/yt)) / (2Lt)$$
$$K = (1.02E-02 \text{ feet/min})$$
$$= 109.727 \text{ gpd/ft}^2$$

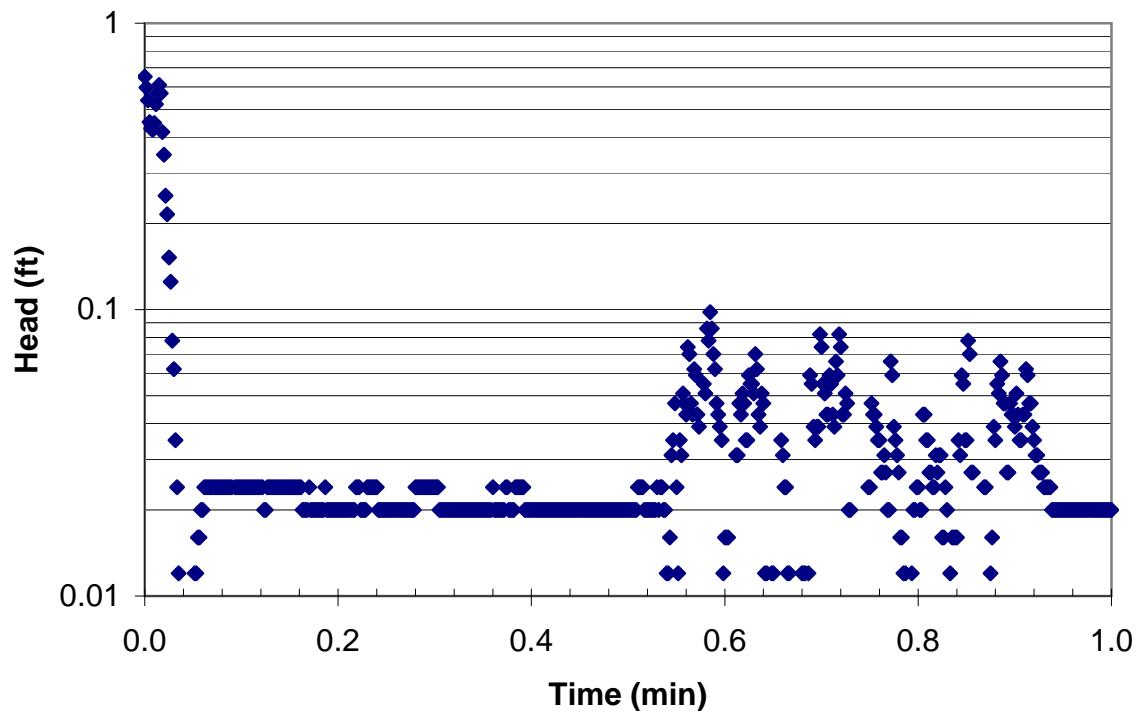
Fully penetrating well

$$\ln(Re/rw) = \{1.1/\ln(H/rw) + C/(L/rw)\} - 1$$
$$\ln(Re/rw) = (0.214 + 0.061) - 1$$
$$= 3.636$$

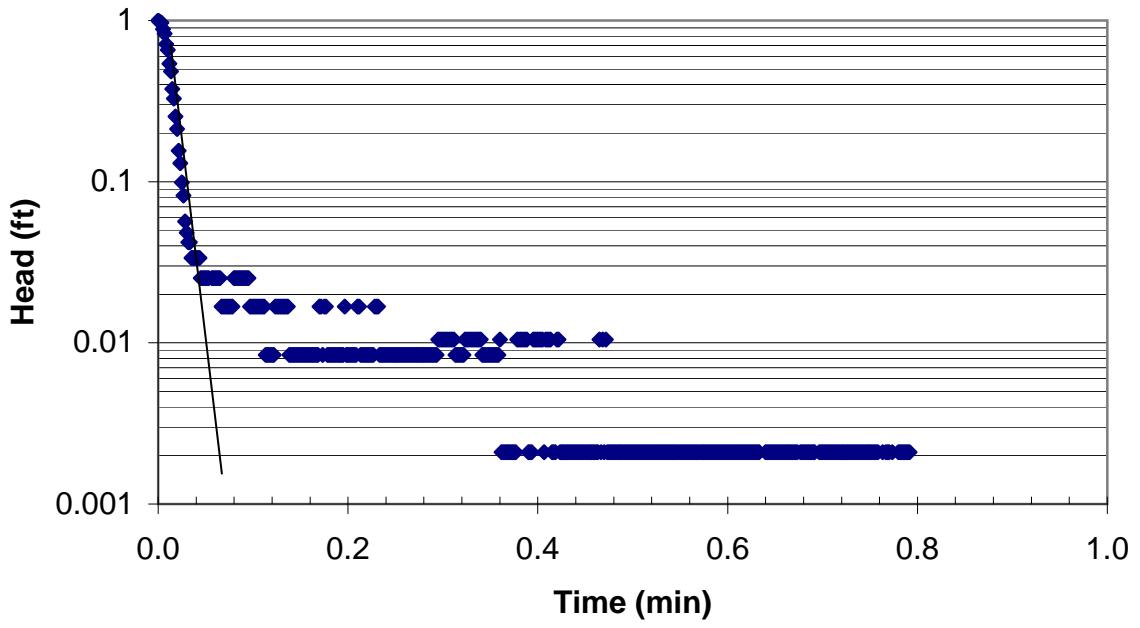
$$K = (1.42E-02 \text{ feet/min})$$
$$= 152.505 \text{ gpd/ft}^2$$



M1 Slug In Test 3 (Failed)



M1 Slug Out Test 3



Slug In Well M3 Test 1

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity values from slug test data

Monitor Well M 3: 7" diameter boring.

	L/rw=	22.337
rc=	0.0833	A= 2.00 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	6.5	C= 1.75
H=	50	
y0=	0.3	
yt=	0.009	$\ln(y0/yt)= 3.507$
t=	1.2	

Partially penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.224)-1 \\ &= 2.285 \end{aligned}$$

$$\begin{aligned} K &= (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt \\ K &= 3.56E-03 \text{ feet/min} \\ &= 38.393 \text{ gpd/ft}^2 \end{aligned}$$

Fully penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw) + C/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.078)-1 \\ &= 3.424 \end{aligned}$$

$$\begin{aligned} K &= 5.34E-03 \text{ feet/min} \\ &= 57.518 \text{ gpd/ft}^2 \end{aligned}$$

Slug Out Well M3 Test 1

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity from slug test data

Monitor Well M 3: 7" diameter boring.

	L/rw=	22.337
rc=	0.0833	A= 2.00 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	6.5	C= 1.75
H=	50	
y0=	0.27	
yt=	0.08	$\ln(y0/yt)= 1.216$
t=	2.6	

Partially penetrating well

$$\begin{aligned}\ln(Re/rw) &= \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\}-1 \\ \ln(Re/rw) &= 0.214 + 0.224)-1 \\ &= 2.285\end{aligned}$$

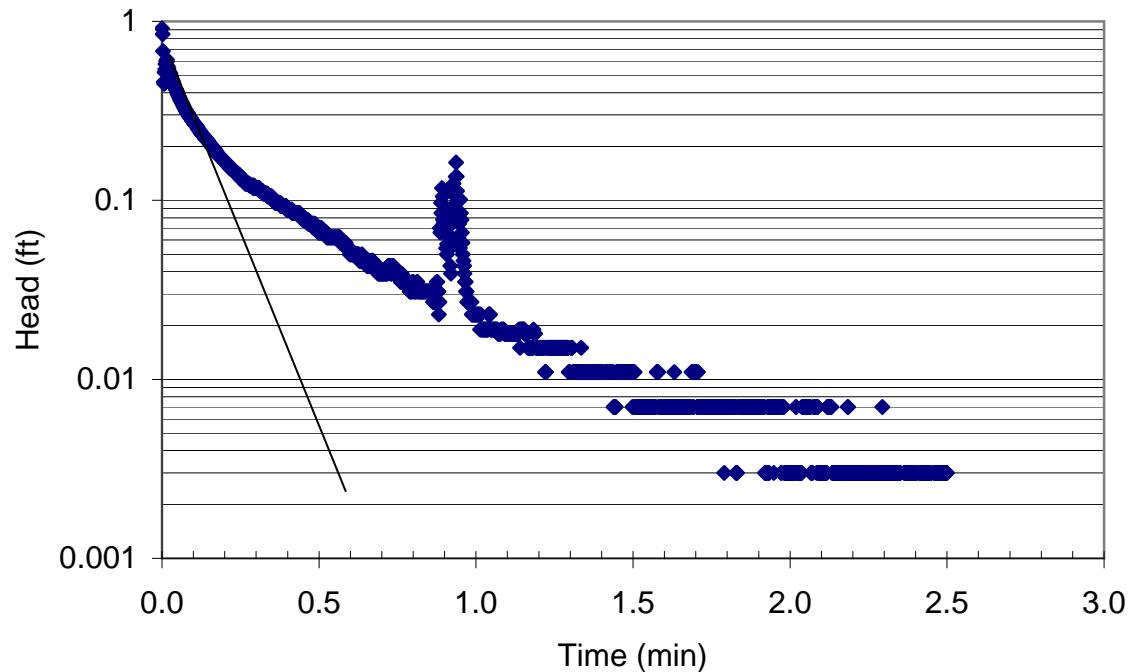
$$\begin{aligned}K &= (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt \\ K &= 5.71E-04 \text{ feet/min} \\ &= 6.147 \text{ gpd/ft}^2\end{aligned}$$

Fully penetrating well

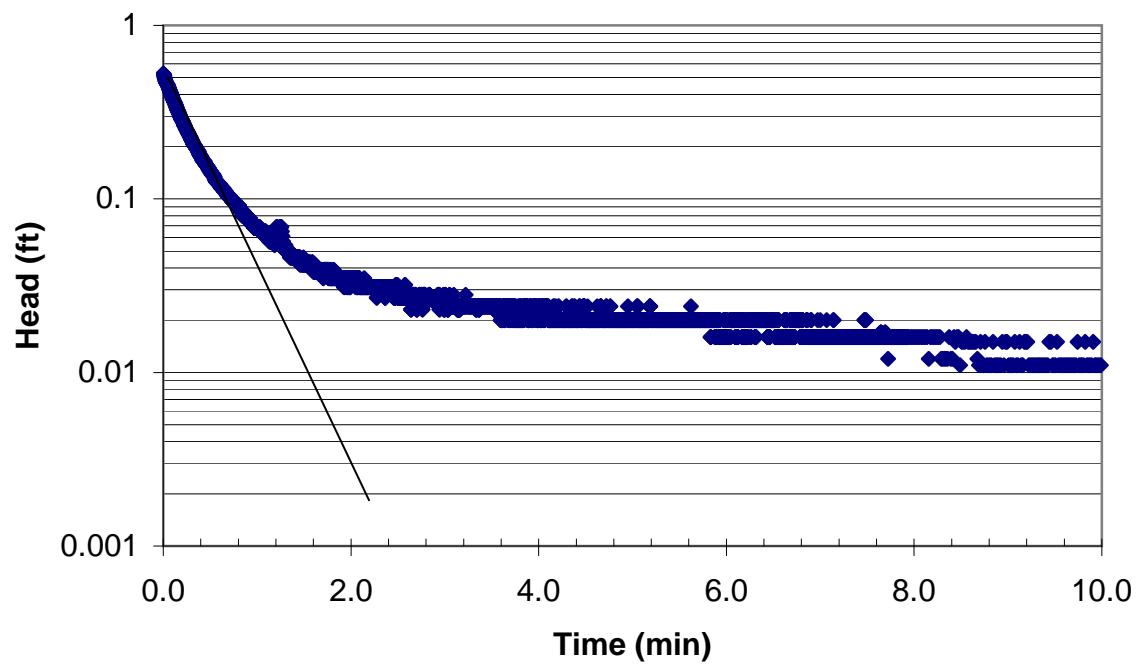
$$\begin{aligned}\ln(Re/rw) &= \{1.1/\ln(H/rw) + C/(L/rw)\}-1 \\ \ln(Re/rw) &= 0.214 + 0.078)-1 \\ &= 3.424\end{aligned}$$

$$\begin{aligned}K &= 8.55E-04 \text{ feet/min} \\ &= 9.209 \text{ gpd/ft}^2\end{aligned}$$

M3 Slug In Test 1



M3 Slug Out Test 1



Slug In Well M3 Test 2

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity values from slug test data

Monitor Well M 3: 7" diameter boring.

	L/rw=	22.337
rc=	0.0833	A= 2.00 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	6.5	C= 1.75
H=	50	
y0=	0.43	
yt=	0.04	$\ln(y0/yt)= 2.375$
t=	0.44	

Partially penetrating well

$$\begin{aligned}\ln(Re/rw) &= \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.224)-1 \\ &= 2.285\end{aligned}$$

$$\begin{aligned}K &= (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt \\ K &= 6.58E-03 \text{ feet/min} \\ &= 70.916 \text{ gpd/ft}^2\end{aligned}$$

Fully penetrating well

$$\begin{aligned}\ln(Re/rw) &= \{1.1/\ln(H/rw) + C/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.078)-1 \\ &= 3.424\end{aligned}$$

$$\begin{aligned}K &= 9.86E-03 \text{ feet/min} \\ &= 106.242 \text{ gpd/ft}^2\end{aligned}$$

Slug Out Well M3 Test 2

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity from slug test data

Monitor Well M 3: 7" diameter boring.

	L/rw=	22.337
rc=	0.0833	A= 2.00 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	6.5	C= 1.75
H=	50	
y0=	0.33	
yt=	0.01	$\ln(y0/yt)= 3.497$
t=	1.64	

Partially penetrating well

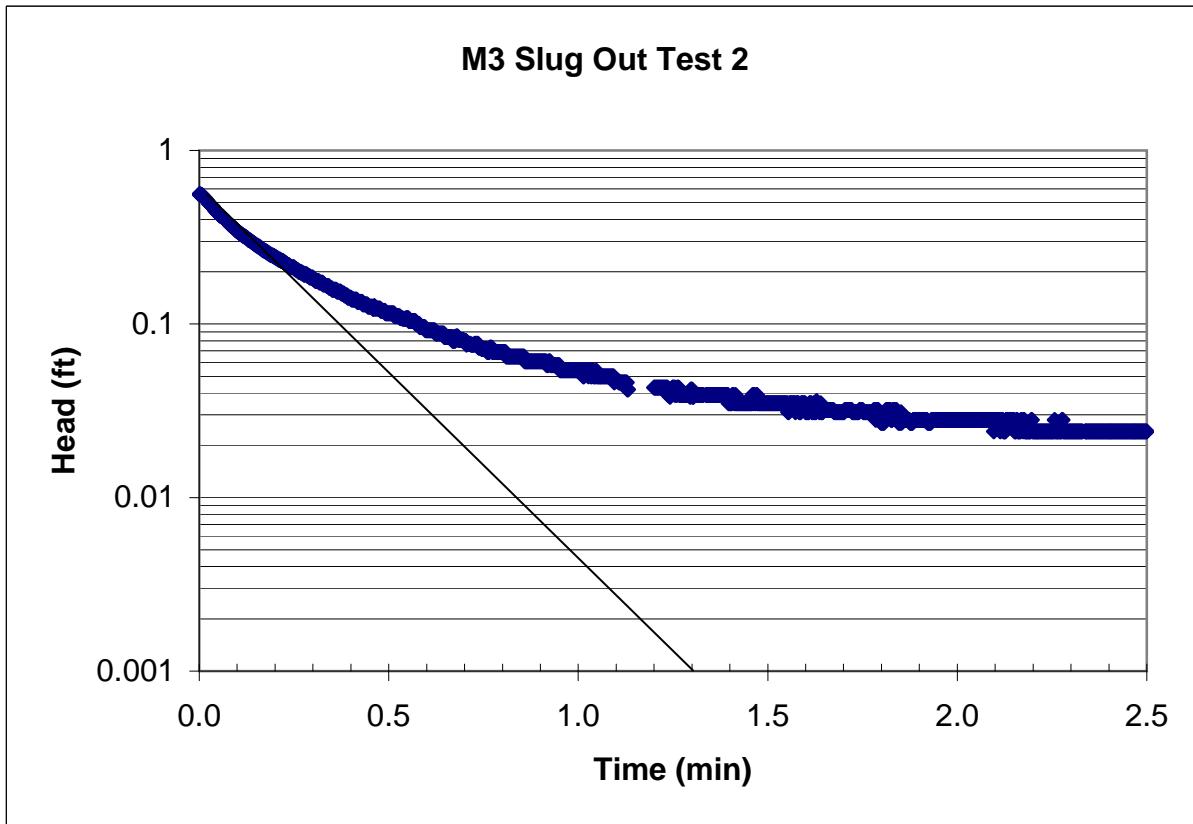
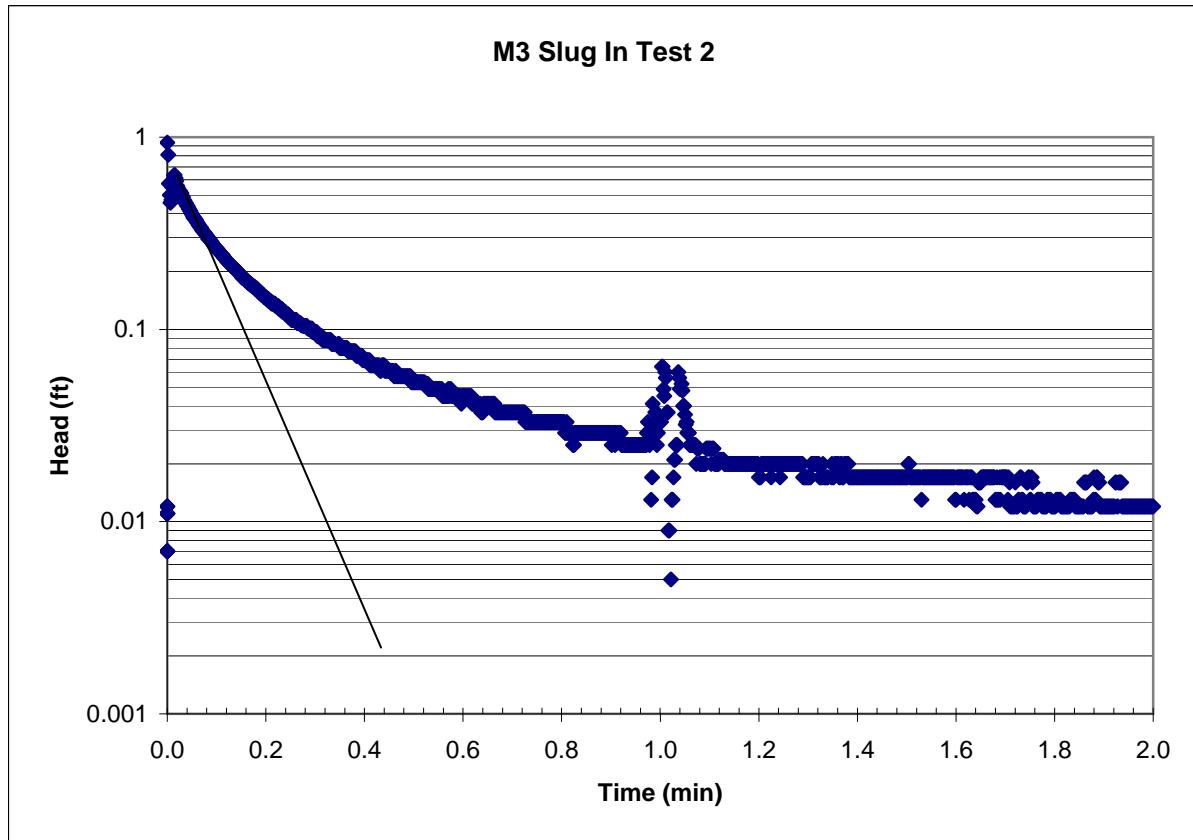
$$\begin{aligned}\ln(Re/rw) &= \{1.1/\ln(H/rw)+[A+B\ln[(D-H)/rw]]/(L/rw)\}-1 \\ \ln(Re/rw) &= 0.214 + 0.224)-1 \\ &= 2.285\end{aligned}$$

$$\begin{aligned}K &= (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt \\ K &= 2.60E-03 \text{ feet/min} \\ &= 28.012 \text{ gpd/ft}^2\end{aligned}$$

Fully penetrating well

$$\begin{aligned}\ln(Re/rw) &= \{1.1/\ln(H/rw)+C/(L/rw)\}-1 \\ \ln(Re/rw) &= 0.214 + 0.078)-1 \\ &= 3.424\end{aligned}$$

$$\begin{aligned}K &= 3.90E-03 \text{ feet/min} \\ &= 41.965 \text{ gpd/ft}^2\end{aligned}$$



Slug In Well M3 Test 3

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity values from slug test data

Monitor Well M 3: 7" diameter boring.

	L/rw=	22.337
rc=	0.0833	A= 2.00 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	6.5	C= 1.75
H=	50	
y0=	0.3	
yt=	0.02	$\ln(y0/yt)= 2.708$
t=	0.8	

Partially penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw) + [A+B\ln((D-H)/rw)]/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.224)-1 \\ &= 2.285 \end{aligned}$$

$$\begin{aligned} K &= (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt \\ K &= 4.13E-03 \text{ feet/min} \\ &= 44.475 \text{ gpd/ft}^2 \end{aligned}$$

Fully penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw) + C/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.078)-1 \\ &= 3.424 \end{aligned}$$

$$\begin{aligned} K &= 6.19E-03 \text{ feet/min} \\ &= 66.630 \text{ gpd/ft}^2 \end{aligned}$$

Slug Out Well M3 Test 3

Cooling Pond, Stimson Lumber Company

Calculations for estimating hydraulic conductivity from slug test data

Monitor Well M 3: 7" diameter boring.

	L/rw=	22.337
rc=	0.0833	A= 2.00 $\ln[(D-H)/rw]=6$
rw=	0.291	B= 0.50
L=	6.5	C= 1.75
H=	50	
y0=	0.3	
yt=	0.03	$\ln(y0/yt)= 2.303$
t=	1.1	

Partially penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw)+[A+B\ln[(D-H)/rw]]/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.224)-1 \\ &= 2.285 \end{aligned}$$

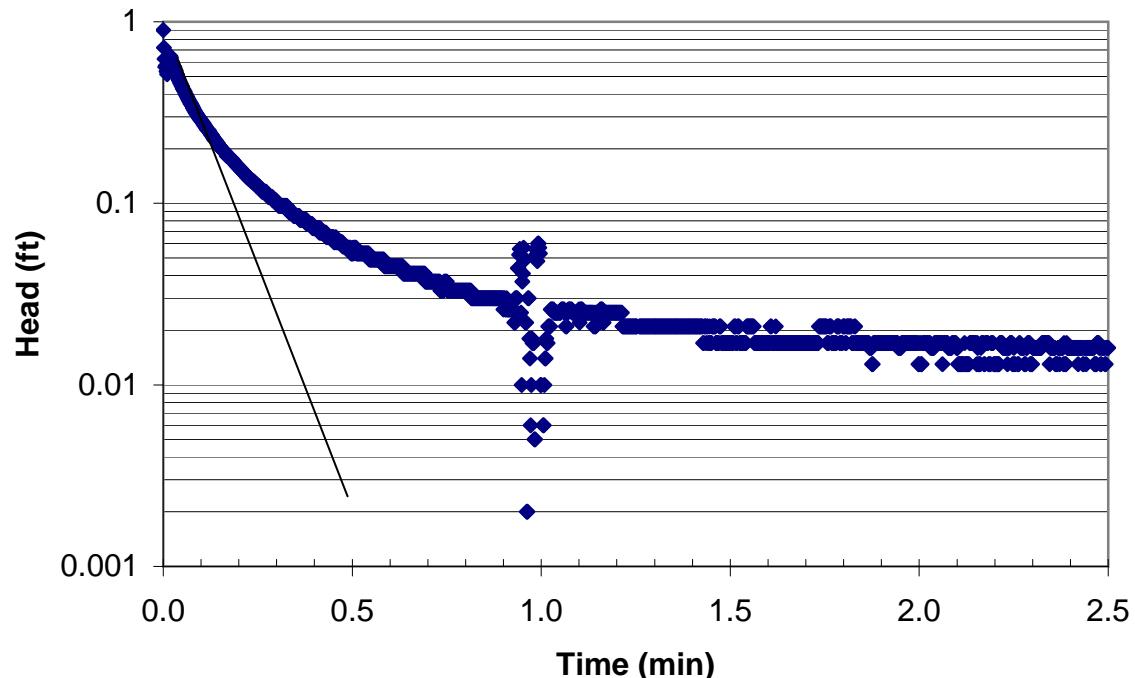
$$\begin{aligned} K &= (rc^2 \ln(Re/rw) \ln(y0/yt)) / 2Lt \\ K &= 2.55E-03 \text{ feet/min} \\ &= 27.502 \text{ gpd/ft}^2 \end{aligned}$$

Fully penetrating well

$$\begin{aligned} \ln(Re/rw) &= \{1.1/\ln(H/rw)+C/(L/rw)\}-1 \\ \ln(Re/rw) &= (0.214 + 0.078)-1 \\ &= 3.424 \end{aligned}$$

$$\begin{aligned} K &= 3.83E-03 \text{ feet/min} \\ &= 41.203 \text{ gpd/ft}^2 \end{aligned}$$

M3 Slug In Test 3



M3 Slug Out Test 3

